

## CLAIMS

1. Method for producing casting cores and/or casting molds with a core shooter and/or mold shooter (1) with at least one shooting unit (2), which has  
5 a shooting head (4) and in which a material to be shaped (50), especially a mixture made from core or molding sand with a binder, is filled, and by supplying compressed air through a shooting board (5) having at least one shooting opening (6) is shot into a mold (100), characterized in that the material to be shaped (50) present in the shooting unit (2) is loosened  
10 mechanically before, during, and/or after the shooting.
2. Method according to Claim 1, characterized in that the material to be shaped (50) is mixed during loosening.
- 15 3. Device for producing casting cores and/or casting molds with at least one shooting unit (2) having a shooting head (4) to be filled with material to be shaped (50), especially core or molding sand with a binder, with a shooting cylinder (3) used for supplying compressed air during shooting, and with a shooting board (5) having at least one shooting opening (6), especially for  
20 performing the method according to Claim 1 or 2, characterized in that at least one moveable mixing tool (7) is arranged at least in the shooting head (4).
4. Device according to Claim 3, characterized in that the mixing tool (7) can  
25 be driven in the shooting head (4), especially so that it rotates, preferably about a longitudinal center axis of the shooting head (4).
5. Device according to Claim 3 or 4, characterized in that the mixing tool (7) has a drive (8) that drives the rotating shaft (9), which is oriented along the

longitudinal center axis of the shooting unit (2) and on which at least one projecting mixing vane (10) is arranged.

6. Device according to one of Claims 3 to 5, characterized in that the drive (8)  
5 can be controlled before, during, and/or after the shooting process.

7. Device according to one of Claims 3 to 6, characterized in that the mixing  
tool (7) is arranged close to the shooting board (5), especially in a center  
region of the shooting head (4).

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8. Device according to one of Claims 3 to 7, characterized in that the drive (8)  
is arranged at an upper end of the shaft (9) and preferably in an upper part of  
the shooting unit (2).

15 9. Device according to one of Claims 3 to 8, characterized in that a plurality,  
preferably three, mixing vanes (10) are arranged on the shaft (9).

10. Device according to one of Claims 3 to 9, characterized in that the mixing  
vanes (10) are oriented horizontally.

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11. Device according to one of Claims 3 to 10, characterized in that a length of  
the mixing vanes (10) in the shooting cylinder (3) corresponds approximately  
to a radius of the shooting cylinder (3) and that a lower mixing vane (10) in  
the shooting head (4) is longer than the mixing vane (10) in the shooting  
25 cylinder (3) and reaches at least to the shooting openings (6) and/or projects  
past the shooting openings (6).

12. Device according to one of Claims 3 to 11, characterized in that the shaft  
(9) reaches with a lower free end thereof nearly up to the shooting board (5)

and that the mixing vane (10) close to the shooting board (5) is arranged on or near a lower free end of the shaft (9).

13. Device according to one of Claims 3 to 12, characterized in that the  
5 mixing vane (10) is assembled from several individual vanes, preferably from two individual vanes forming a mixing vane pair and that the individual vanes are mounted with inner ends thereof to the shaft (9) of the mixing tool (7) and point with outer free ends thereof radially in different directions.

10 14. Device according to one of Claims 3 to 13, characterized in that the mixing tool (7) is fixed detachably to the drive (8) and can be removed therefrom.

15 15. Device according to one of Claims 3 to 14, characterized in that a discharge opening (11) for removing excess material to be shaped (50) is provided in the shooting head (4).